

NanoCoral™ High Surface Area Platinum Catalysts to Improve Fuel Cell Efficiency

BENEFITS

- Reduces amount used of a rare and expensive raw material
- Retains functionality with less material

APPLICATIONS

- Fuel Cells
- Solar Cells
- Sensors
- Electronics
- Catalysis

PATENTS

- US 7,374,599, B1
- US 6,627,048

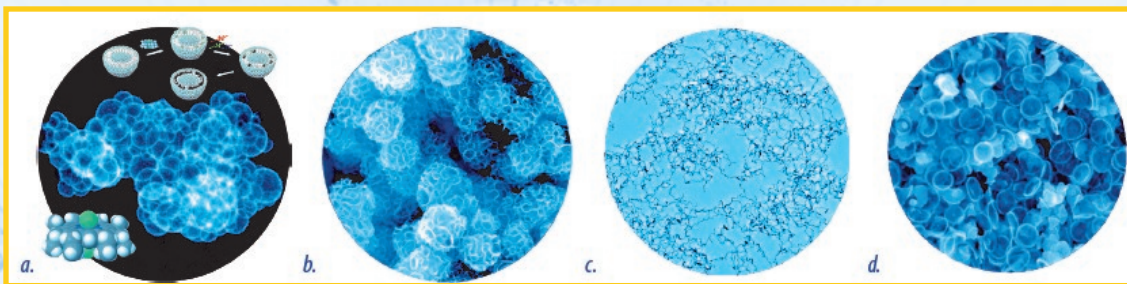
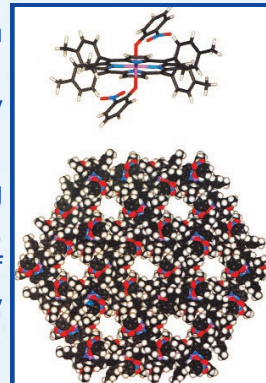
U.S. PATENTS PENDING - 8

INTELLECTUAL PROPERTY & LICENSING CONTACT

Bianca K. Thayer
505.284-7766
bkthaye@sandia.gov

NanoCoral™ produces platinum nanomaterials which can significantly reduce costs and improve the efficiency and durability of hydrogen fuel cells and other renewable energy technologies.

NanoCoral™ is an innovative nanotechnology for producing platinum catalysts and offers unique control over the shape, size, porosity, composition, stability, and other functional properties of platinum nanostructures compared with those achieved by existing methodologies.



Some of the complex platinum nanostructures that can be produced, offering a wide range of potential applications in addition to hydrogen fuel cells; (a) platinum nanocage spheres template (b) nanospheres 'foam' composed of convoluted dendritic nanosheets template (c) 2 nm diameter nanowire networks template; and (d) platinum nanowheels template

The metals nanostructuring technology is based on two novel platform technologies—templated dendritic nanostructure growth and photocatalytic seeding and growth. Dendritic and ripening-resistant holey-sheet nanocatalyst technology enables the size and shape of platinum structures to be manipulated at the nanoscale to produce novel platinum catalysts and electrocatalysts and other nanomaterials. NanoCoral™ was recognized as an R&D 100 technology by *R&D Magazine* in 2009.

Licensing and Partnering Status

Various licensing and partnering options are available. Please contact the Intellectual Property department to discuss.

Technology Readiness Level

Sandia estimates the TRL at 4. Key elements of the technology have been demonstrated in a laboratory environment.



Sandia National Laboratories is a multi-program laboratory managed and operated by Sandia Corporation, a wholly owned subsidiary of Lockheed Martin Corporation, for the United States Department of Energy's National Nuclear Security Administration under contract DE-AC04-94AL85000. SAND #2011-5166P



**Sandia
National
Laboratories**